An appendix provides a list of new names published in the text. These include 7 new species, one new subspecies, 11 new varieties, and 16 new combinations. The literature cited section, which is exclusive of the nomenclatural citations, runs 10 pages and is a treasure-trove for those seeking additional information on the mustards.

It is difficult to find much fault with this book. Although a number of typographical errors were noted, these are but minor distractions. I found none that seemed to alter the intended meaning of the text, or introduce confusion into the keys or technical descriptions. Perhaps my greatest complaint might be the seemingly arbitrary exclusion of Greenland and the Caribbean islands from coverage. Surely inclusion of these regions would not have added substantially to the complexity of the text, and would have rounded out coverage for an otherwise broadly circumscribed "North America". Nevertheless, Rollins' work is an outstanding piece of taxonomic literature, worthy of a place on the reference shelf of any serious botanist.

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Remarkable Agaves and Cacti. By Park S. Nobel. 1994. Oxford University Press, New York and Oxford. 166 pp. Hardcover and Paperback, $45, $22. ISBN 0-19-508414-4, 0-19-508415-2 (pbk).

This "remarkable" book examines three aspects of agaves and cacti. The first part (Chapters 1–3) is a review of past and current uses of these desert and not-so-desert denizens. Agaves provide food, steroids, fodder, ornament, but most importantly beverages and fiber. Already, agaves produce 6% of the world's supply of precursors for corticosteroids. Certain cacti offer fruits and stems used as food, fodder, ornament, hallucinogens and carmine dye. Tells how Sicilians are able to produce larger and sweeter tuna fruits of prickly-pears. The red dye carmine, produced by cochineal scale insects farmed on prickly-pears, is a multi-use stain for arts, clothing, food, and cosmetics. In the 18th century, the value of cochineal dye exported from Mexico was second only to silver. Cheap analine dyes largely replaced carmine, yet in 1992, 300 tons were produced, mostly in Peru; 80,000 to 130,000 female scale insects are needed to produce one kilogram of dyestuff.

The second part (Chapters 4–7) is a somewhat detailed discussion of the adaptive physiology of agaves and cacti. Explains water, CO2 and mineral uptake, storage, and minimization of water loss by agaves and cacti. Answers such questions as: Why do roots grow better under or near rocks? How do mycorrhizae enhance growth? How is water stored? Why are prickly-pear pads oriented in certain patterns? How do these plants endure very high and low temperatures? Why do stomates open at night and close during the day? Which is the most efficient photosynthetic pathway—C3, C4 or CAM metabolism? How does spacing of plants affect productivity?

The third part (Chapters 7–8) alerts us to the great, useful biomass production potential of certain species of agaves and cacti, more so than nearly any other vascular plant group. The author predicts a bright future for agaves and cacti. The understanding of morphology and physiology should result in new technology that will enhance production and increase profit from farming cacti and agaves.

The author amazingly weaves his tale utilizing a couple handsful of species of two diverse groups of plants, monocots and dicots. His engineering background shows through his presentation of form and physiology. This book should intrigue the grower who likes to experiment, the student who wishes to learn basic biology in a challenging way, and the visitor to arid lands to become aware of the invisible activities occurring in the common desert agaves and cacti. The advanced student can learn from Dr. Nobel's many other books and journal articles on these subjects.

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